installation of the box culvert that causes an impediment to wildlife movement, corrective actions, such as the placement of additional riprap or other means of restoring the channel grade sufficient to allow wildlife movement, would be taken.

3.7 LAND USE AND ACCESS

This section identifies and describes the jurisdiction and existing and planned land uses in the vicinity of the Proposed Action, as well as environmental consequences as they apply to land use and access.

Information was compiled from agency maps and planning documents, aerial photography, and previously conducted resource studies. Field investigations were conducted in August 2000 and April 2001 to verify existing land use conditions.

Land jurisdiction represents the administrative control maintained by the responsible Federal, state, Indian nation, or local agencies within the Project area. The jurisdiction does not necessarily dictate ownership. Jurisdictional boundaries were obtained from BLM and Arizona State Land Department (ASLD) maps and digital data. The main jurisdictions within the Project area include BLM, ASLD, Hualapai Tribe, and Mohave County. Private lands in the Project area are under the jurisdiction of Mohave County. Land jurisdiction and ownership for the power plant site, pipeline corridors, and surrounding areas are presented in Section 2.0 on Figure 2-12.

Existing land uses (regardless of jurisdiction or planned use) were determined from aerial photography and subsequent field visits. Planned land uses were assessed from appropriate planning documents; the plans applicable for land management in the area include the Kingman Area Resource Management Plan (BLM 1995) and Mohave County General Plan (1995) and Zoning Ordinance (2000). The approximate locations of residences and existing land uses are shown on Figure 3.7-1; planned land uses are shown on Figure 3.7-2.

In May 2001, the BLM Kingman Field Office completed the Cane Springs Land Exchange. This exchange brought additional lands in the region under the management responsibility of BLM. Twenty-eight sections of land in T18N and T19N; R13W and R14W just west of US 93 (Figure 3.7-3) were involved in this exchange. The Alternative T gas pipeline corridor crosses portions of two of these sections. Due to the timing of this land exchange agreement, and the limited effect this change in management responsibility has on the proposed Project, this Draft EIS was completed without further assessment of the lands involved in this exchange.

3.7.1 Affected Environment

The following sections describe the current land use and access conditions; this represents the baseline for assessment impacts.

3.7.1.1 Region of Influence

The region of influence for assessing construction, operation, and maintenance impacts on land uses includes all areas within 5 miles of the proposed power plant site, substation, access road, well pads, and agricultural area (all of these Project lands previously part of Banegas Ranch), and 1 mile on each side of the centerline of each alternative pipeline corridor. The Mead-Liberty 345-kV transmission line right-of-way, north of the alternative pipeline terminus, is also included for the potential installation of the redundant communication OPGW. In addition, lands owned by the Hualapai Tribe that are within the Big Sandy Valley have been included as a potentially sensitive land jurisdiction.

3.7.1.2 Existing Conditions

The Big Sandy Valley is surrounded by the Aquarius Mountains to the east, and McCracken and Hualapai Mountains to the west. The Big

Sandy River and US 93 are oriented approximately north-south through the valley. Land uses throughout the valley include ranching, residential uses, and some commercial uses. The developed uses tend to be clustered along US 93 and near the community of Wikieup, which is located toward the south end of the valley. Lands 5 miles or less from the proposed power plant site are privately owned or managed by the BLM. Lands 1 mile from the proposed pipeline corridor are privately owned, Hualapai lands, public lands managed by the BLM, or state lands managed by ASLD (refer to Figure 2-12).

The general area surrounding the proposed power plant site, substation, agricultural uses, water wells, and associated facilities is located approximately 3.5 miles southeast of Wikieup in Sections 5 and 7, T15N, R12W. The terrain varies from flat areas, to rolling hills, to fairly mountainous and rocky terrain east of the proposed power plant site. There are small washes dissecting the area, as well as two large ephemeral streams, Sycamore Creek and Gray Wash. The proposed power plant site is located near one small spring and wetland area (refer to Section 3.12) with primarily native vegetation (refer to Section 3.11). Vegetation across the general area consists of native upland Sonoran Desert species of grasses, desert shrubs, and some cacti. The area is primarily open rangeland that is undeveloped and/or grazed by cattle and/or wild burros. There is a grazing allotment for use of public lands.

The general area shows evidence of some vehicle traffic; however, the disturbance appears predominantly limited to small areas (e.g., near well sites). There is one large bladed strip along the northern boundary of Section 7, which crosses through Sycamore Creek. This is the route of the proposed county road and currently is used for access from US 93 to the east.

The developed uses in the vicinity are limited to the Mead-Phoenix Project 500-kV transmission line, Phelps Dodge water pipeline, scattered water wells, a clay mining operation, two existing dirt roads [one through Sections 5 and 6 (T15N, R12W) and one through Section 7], and one residence that has several trailers associated with it. The residence is located approximately 0.5 mile southwest of the proposed power plant site, directly east of the proposed wells and agricultural area. The general area includes privately owned and BLM-managed lands. Plans for Mohave County and BLM-managed public lands do not indicate any proposed additional development near the proposed power plant site.

Communication Facilities

Land uses at Hayden Peak in the Hualapai Mountains include existing access roads and radio/microwave towers.

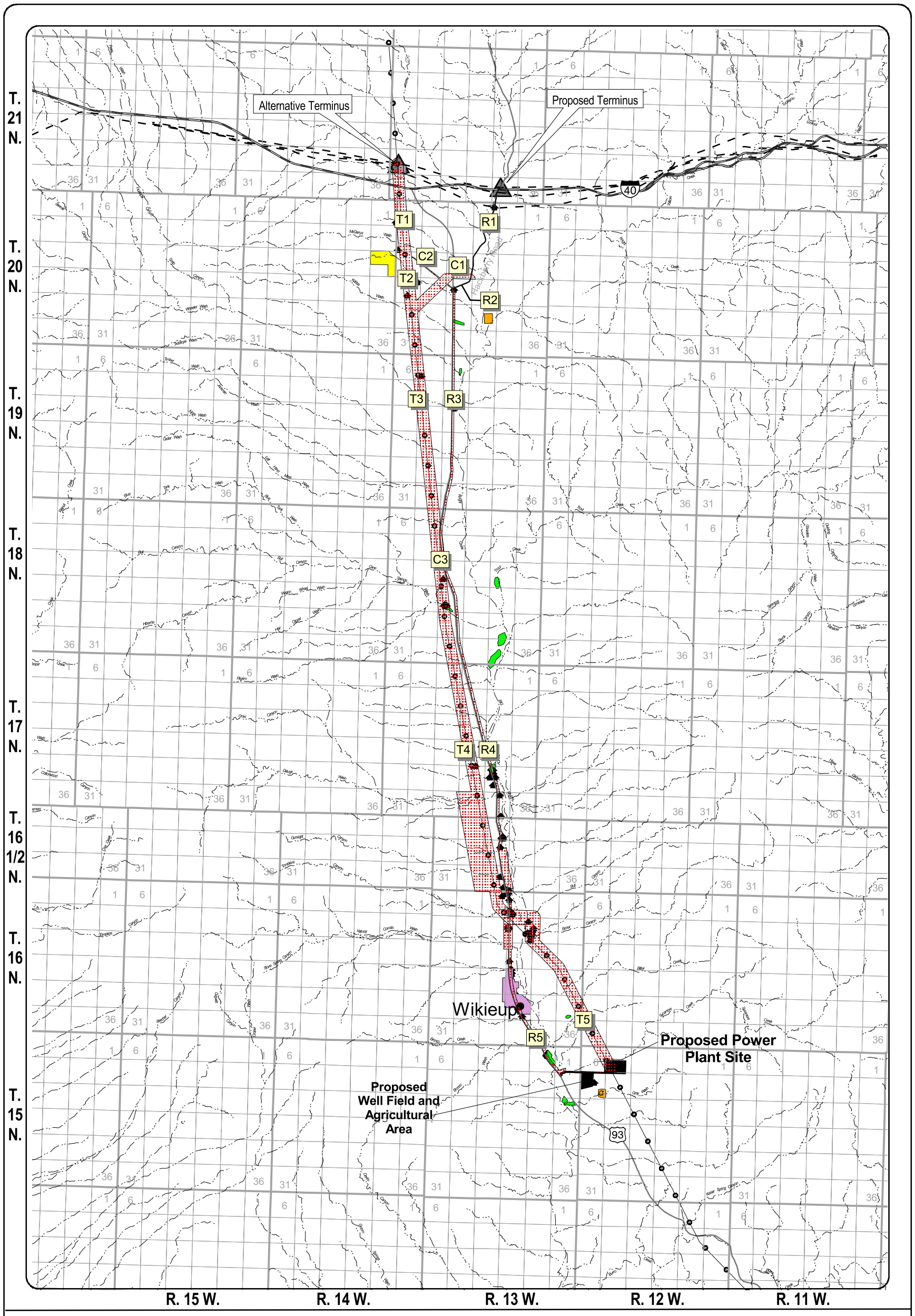
Land uses surrounding the Mead-Liberty 345-kV transmission line, where the OPGW option would be installed, are described under the pipeline corridor segments following the transmission lines. Lands north of the alternative pipeline terminus (Section 29, T21N, R14W) are privately-owned lands that typically include large-acreage remote ranches with a single residence and other structures associated with ranch uses (e.g., corrals, barns).

There are about three residences located near or adjacent to the Mead-Phoenix Project 500-kV or Mead-Liberty 345-kV rights-of-way. In addition to the privately owned lands, there are undeveloped lands managed by ASLD.

Natural Gas Pipeline Corridor

As described in Section 2.0, the corridor for the proposed natural gas pipeline would include corridor segments R1, C1, T3, C3, T4, and R5. The land uses associated with each corridor segment are described below, beginning closest to the plant site.

Corridor segment R5 follows the alignment of the proposed access road west to US 93, turns north and follows along the east side of the US 93 to the intersection of the highway and the Mead-Phoenix Project 500-kV transmission line.



Legend

Resource Components
- Agriculture
- Industrial
- Mining Area (Sand, Gravel, Zeolite)
- Mixed Use - Residential, Commercial, Agriculture
- Residential
- Residential or Commercial Sites

Note: Inventory performed in corridor segments only.

Project Components
- Pipeline Corridor Segments
  - Proposed Pipeline Corridor - R1,C1,T3,C3,T4,R5
  - Alternative R Corridor - R1,R2,R3,C3,R4,R5
  - Alternative T Corridor - T1,T2,T3,C3,T4,T5
- Proposed Plant Facilities

General Reference
- Existing Pipelines
- Mead-Liberty/Mead-PhoenixTransmission Lines
- Stream/River
- Interstate (40)
- U.S. Route (93)

Existing Land Use in the Big Sandy Basin

Big Sandy Energy Project EIS

0 5

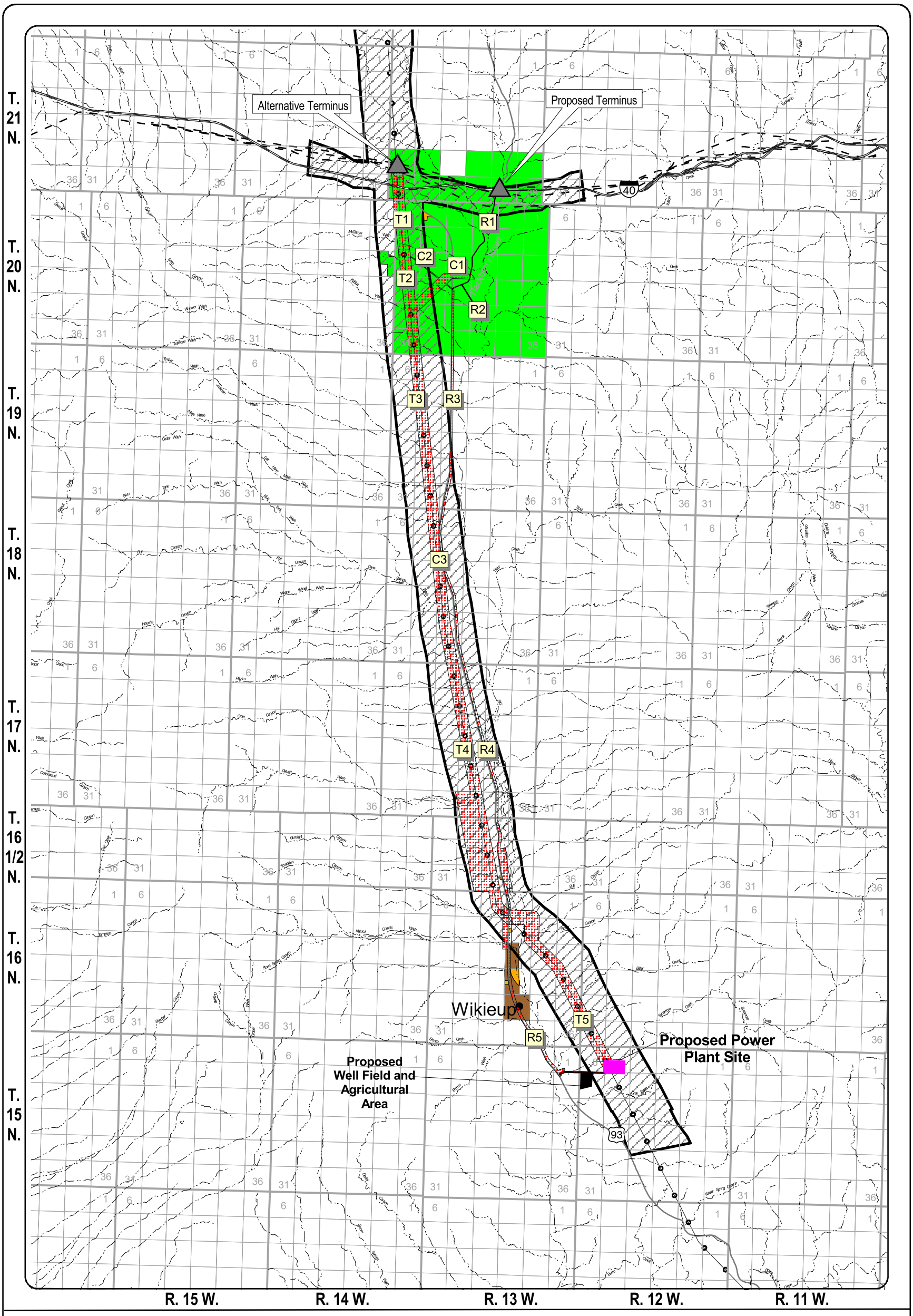
Scale in Miles

Universal Transverse Mercator Projection
1927 North American Datum
Zone 12

N

Figure 3.7-1

x:/bigsandy/projects/landuse.apr



Legend

Resource Components
- BLM Utility Corridor
- Surbaban Development Area
- General
- Commercial
- Industrial

Project Components
- Pipeline Corridor Segments
- Proposed Pipeline Corridor - R1,C1,T3,C3,T4,R5
- Alternative R Corridor - R1,R2,R3,C3,R4,R5
- Alternative T Corridor - T1,T2,T3,C3,T4,T5
- Proposed Plant Facilities

General Reference
- Existing Pipelines
- Mead-Liberty/Mead-PhoenixTransmission Lines
- Stream/River
- Interstate (40)
- U.S. Route (93)

0 5

Scale in Miles

Universal Transverse Mercator Projection
1927 North American Datum
Zone 12

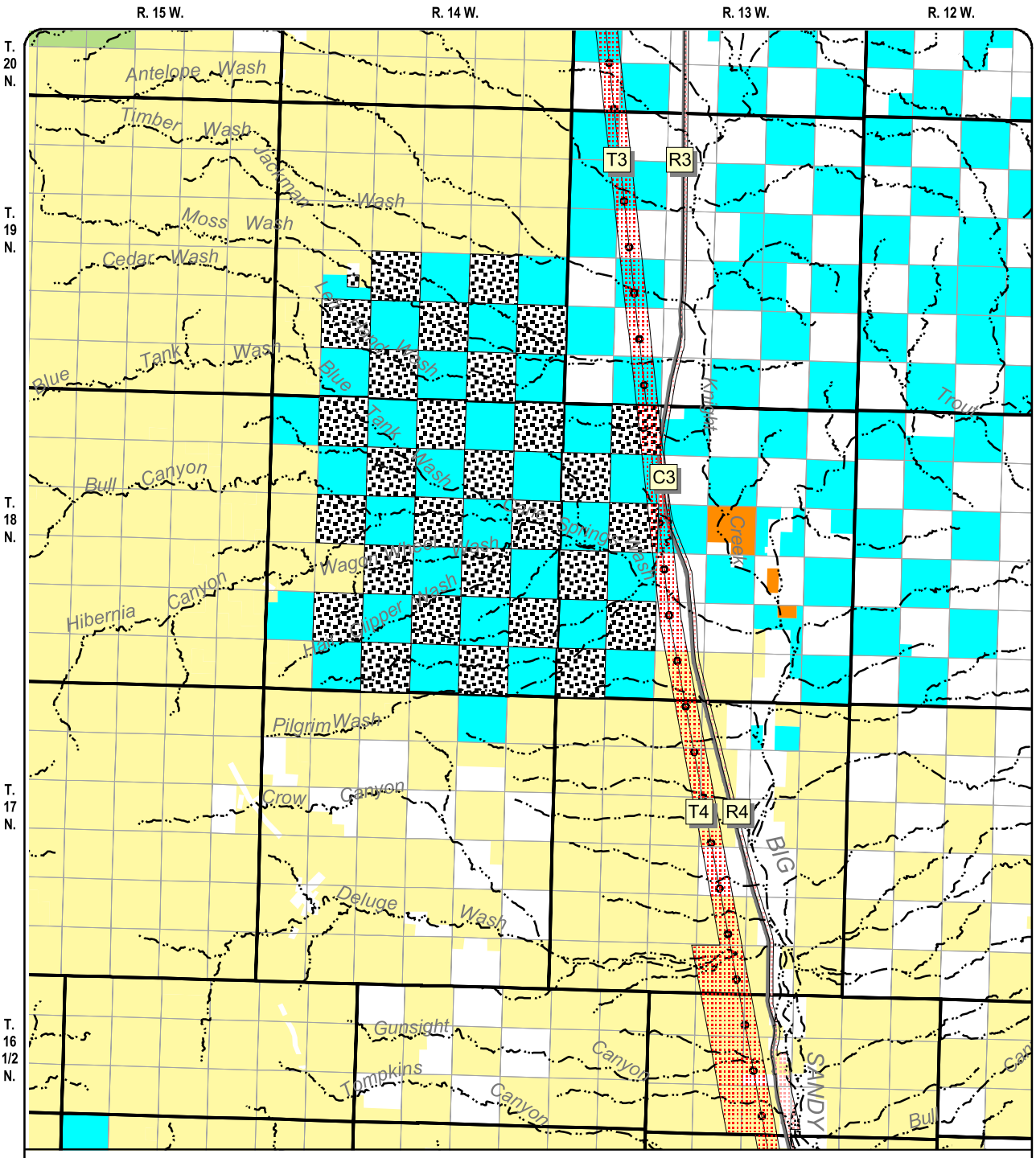
x:/bigsandy/projects/jurisdiction.apr

Planned Land Use in the Big Sandy Basin

Big Sandy Energy Project EIS

N

Figure 3.7-2



Legend

- Cane Springs Land Exchange - From Private to BLM Managed Lands
- Private
- State
- BLM
- Hualapai Reservation
- Parks

Project Components

- Pipeline Corridor Segments
- Proposed Pipeline Corridor - R1,C1,T3,C3,T4,R5
- Alternative R Corridor - R1,R2,R3,C3,R4,R5
- Alternative T Corridor - T1,T2,T3,C3,T4,T5

General Reference

- Existing Pipelines
- Mead-Liberty/Mead-Phoenix Transmission Lines
- Stream/River
- U.S. Route 93

0 5

Scale in Miles

Universal Transverse Mercator Projection
1927 North American Datum
Zone 12

N

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Cane Springs Land Exchange

Big Sandy Energy Project EIS

Figure 3.7-3

This corridor segment crosses the Big Sandy River and travels through the community of Wikieup. Between the plant site and US 93, a large portion of the county road alignment within this corridor has been partially disturbed; much of the vegetation has been removed and vehicle travel along the proposed access road is apparent. The corridor crosses through Sycamore Creek, where vehicle disturbance is also apparent. Near US 93, there is an existing road (Cholla Canyon Ranch Road) which is the current access point from the highway into the general plant site area. North of Cholla Canyon Ranch Road, US 93 crosses over the Big Sandy River via a bridge.

The Big Sandy River area is relatively undeveloped with the exception of the highway crossing. ADOT plans to widen the highway through this area, which will include a second bridge to the west of the existing bridge. North of the Big Sandy bridge, there are four residences located in or near the corridor segment; however, the areas along US 93 remain relatively undisturbed south of the developed community of Wikieup. Through about two miles of Wikieup the land in the corridor tends to be partially to completely disturbed by development and ranching activities; there are up to 15 residences and up to 6 businesses, including a gas station and nursery/garden, located in or near the pipeline corridor. ADOT's proposed highway improvements would not expand the highway or its right-of-way east of US 93 through this area; rather there will be a by-pass road constructed to the west of Wikieup. About 0.25 mile north of Wikieup, there is a historical marker for the Big Sandy Valley located along the east side of the highway (Section 15, T16N, R13W). This corridor segment terminates where the Mead-Liberty 345-kV and Mead-Phoenix Project 500-kV transmission lines cross over US 93. Lands within corridor segment R5 are primarily privately owned, though some small land areas are managed by the BLM (i.e., at section corners along the proposed access road alignment).

Corridor segment T4 parallels each of the Mead-Liberty 345-kV and Mead-Phoenix Project 500-kV transmission lines through a BLM-designated 1-mile-wide utility corridor. As described in Section 2.0, this corridor segment includes a broader area to the west of the transmission lines, for a distance of about 4 miles, to provide an opportunity to avoid the Carrow-Stephens ACEC and existing topographic features. There is only one residence within this corridor, which is along US 93, just north of the Mead-Phoenix Project 500-kV line (on the west side); three additional residences are located on the east side of the highway, immediately north of the transmission lines (located in corridor segment T5). Despite these residences located along US 93, a majority of this corridor is undeveloped rangeland that is used for grazing. In addition, there is a primitive access road that generally follows topographic contours near the transmission line. This road was used for construction of the transmission line and is currently used for maintenance activities. The road is not maintained, but does provide limited access into the area. This corridor segment crosses privately owned lands and lands managed by the BLM and ASLD.

Similar to corridor segment T4, the land within corridor segment C3 includes relatively undeveloped areas used for grazing. This corridor includes US 93 along the east side, providing the opportunity for the pipeline to parallel the transmission lines or the highway. Roads in the corridor, including US 93, the transmission line access road, and several other small dirt roads, are the primary sources of disturbance. The unmaintained transmission line road generally follows the natural contours of the land. There are no residences located in this corridor segment. This corridor segment crosses privately owned lands and lands managed by ASLD.

Corridor segment T3 includes relatively undeveloped rangeland, though some residential development is present toward the north end of the segment. There are two residences, as well as a communication tower, located in Section

30, T20N, R14W, just west of the transmission lines. These are the only developed uses, beyond the transmission lines and the transmission line access road, that are located in this corridor segment. Similar to the transmission line access road in other corridor segments, the road generally follows topographic contours. Corridor segment T3 includes privately owned lands and lands managed by ASLD.

Corridor segment C1 crosses undeveloped rangeland that is used for grazing. This corridor does not follow an existing linear feature and disturbance is limited to the existing nearby access provided by the transmission line access road, Old US 93, US 93, and Hackberry Road. The corridor crosses both Old US 93 and US 93. Old US 93 provides access to Windmill Ranch residences (40-acre parcel residential area) and Sierra Vista Estates (residential subdivision in Section 13, T20N, R14W). US 93 is a two lane highway maintained by ADOT. Roads are the only developed uses; no residences are located within this corridor segment. Corridor segment C1 primarily crosses lands managed by ASLD, though some section corners of privately-owned land are also present in the corridor (see Figure 2-12).

Corridor segment R1 parallels Hackberry Road, a dirt road maintained by Mohave County. The corridor crosses through relatively undeveloped rangeland that is used for grazing. Disturbance is limited to the existing roadway, side access roads, an abandoned mining area (Section 3, T20N, R13W), one residence, gas pipeline crossing areas and associated facilities, and the I-40 corridor. The single residence is located along the east side of Hackberry Road in Section 3, T20N, R13W. The corridor crosses two existing natural gas pipelines, one just south of the residence, the other crossing about 0.5 mile north of the residence. Just north of the second pipeline crossing, Hackberry Road crosses under I-40, at an existing highway underpass. This corridor segment terminates at a third natural gas pipeline immediately north of I-40. This pipeline corridor segment includes privately owned lands and lands managed by ASLD.

Alternative Gas Pipeline Corridors

The two alternative natural gas pipeline corridors follow road alignments completely (Alternative R) or along the transmission lines completely (Alternative T). The land uses associated with each corridor segment that have not been described under the proposed natural gas pipeline corridor are described below. Although none of the alternatives include corridor segment C2, a description of the existing land uses along this crossover segment is also included.

Alternative R Gas Pipeline Corridor

As described in Section 2.0, Alternative R gas pipeline corridor includes corridor segments R1, R2, R3, C3, R4, and R5. Corridor segments R1, C3, and R5 are described under the Proposed Action. The land uses associated with corridor segments R2, R3, and R4 are described below, beginning closest to the plant site.

Corridor segment R4 parallels US 93 and the Big Sandy River. The corridor includes areas east of, and adjacent to, the US 93 right-of-way. The land is relatively undeveloped and is primarily used for grazing, though there are some scattered residences associated with some of these ranch uses. The southern part of the corridor also crosses through the Carrow-Stephens Ranches ACEC (refer to Section 3.10). There are about eight residences located within the corridor along the east side of US 93; additional residences are present outside the width of the corridor to the east and along the west side of US 93. This corridor segment crosses privately owned lands and lands managed by the BLM.

The land uses present in the R3 corridor segment are very similar to those described for corridor segment R4. There are about four residences located within the corridor; additional residences are present outside the corridor and along the west side of US 93. This corridor segment crosses only privately owned lands.

Corridor segment R2 follows along Hackberry Road, which is an unpaved public road maintained by Mohave County. The land in the area is undeveloped; there are no developed uses except one residence that is located outside the corridor. Lands within this corridor are privately owned and managed by ASLD.

Alternative T Gas Pipeline Corridor

As described in Section 2.0, the Alternative T gas pipeline corridor includes corridor segments T1, T2, T3, C3, T4, and T5. Corridor segments T3, C3, and T4 are described under the Proposed Action. The land uses associated with corridor segments T1, T2, and T5 are described below, beginning closest to the plant site.

Corridor segment T5 generally follows the Mead-Phoenix Project 500-kV and Mead-Liberty 345-kV transmission lines from the plant site to its intersection with US 93, except for the area where the corridor crosses the Big Sandy River. This corridor segment also crosses the buried Phelps Dodge water pipeline near the Big Sandy River. The lands through this corridor are mostly undeveloped and used for grazing, though some development is present near the Big Sandy River and where the corridor approaches US 93. Additionally, there is an unmaintained primitive access road that follows the transmission lines. There are about 10 residences located in this corridor (six along the river, four along US 93). Additionally, there are several non-residential structures located in the corridor along the boundary of Sections 10 and 11 (T16N, R13W). This corridor includes lands managed by the BLM and privately owned lands.

Corridor segment T2 is primarily undeveloped rangeland. There are some scattered residences located near the area, though they are completely outside the corridor. The corridor segment is intersected at its north end by Old US 93, a well-maintained dirt road. Additionally, the primitive transmission line road is located in and provides access to areas within this corridor. This corridor segment crosses privately owned lands and lands managed by ASLD.

Land uses in corridor segment T1 are similar to those described for corridor segment T2; there are no residences located in this corridor segment. Corridor segment T1, however, includes the crossing of I-40 near its north end. The transmission lines cross over I-40; there is not an existing crossing under I-40 in this corridor segment. The corridor also intersects with three natural gas pipelines north of I-40. At the north end of the corridor, there is a large facility operated by El Paso Natural Gas located in Section 29, T21N, R14W, adjacent to the middle pipeline crossing. This corridor segment includes privately owned lands and lands managed by ASLD.

Crossover Segment C2

Corridor segment C2 follows Old US 93. This corridor is narrow, including only the road right-of-way. The land use near the road is generally grazing; there are a few scattered residences (on minimum 40-acre parcels). There are no developed uses, aside from the road itself, located within the corridor. This corridor segment crosses privately owned lands and public lands managed by the BLM.

Management Plans and Policies

Bureau of Land Management

The Kingman Area Resource Management Plan (RMP) guides management of BLM lands in the vicinity of the Project (1995). The Project would be located primarily in the General Management Area, meaning the lands are not subject to unusual demands requiring special management and typically are managed for multiple uses. Land use management prescriptions described in the RMP that are relevant to the proposed Project are for land use authorizations, or rights-of-way, utility corridors, and access issues. Portions of corridor segments R4 and T4 cross the Carrow-Stephens Ranches ACEC (refer to Section 3.10).

BLM grants rights-of-way on a case-by-case basis, within existing rights-of-way whenever possible. In addition to the existing rights-of-way, BLM has designated utility corridors, which range from 1 to 2 miles in width, which are intended to prevent proliferation of utility systems across public lands and reduce potentially adverse impacts on sensitive resources. Existing utility corridors are designated along the Mead-Liberty 345-kV and Mead-Phoenix Project 500-kV transmission lines. These corridors are shown on Figure 3.7-2. Large utilities would be restricted to these corridors.

Access across and to public lands is specified as a management concern in the RMP. BLM has determined areas where access should be improved; none of these improvement areas are located in the Project area. Additionally, no specific policies or management guidelines regarding access have been established.

Mohave County

The Land Use Element of the Mohave County General Plan (1995) defines four planning area types for the unincorporated area: Rural Development Area (RDA), Suburban Development Area (SDA), Urban Development Area (UDA), and Outlying Communities. These planned uses are shown on Figure 3.7-2.

RDAs are intended to remain rural in nature with small neighborhood commercial uses serving local residential needs. No urban or suburban services or facilities are provided. SDAs are intended to provide opportunities for large-lot residential areas with non-residential uses (e.g., neighborhood commercial services) in appropriate locations. SDAs typically include facilities such as paved streets, septic systems, and public water supply. The plan indicates that there is an SDA planned for all of T20N, R13W and part of T21N, R13W. UDAs provide locations for more intense development, including residential uses on lots smaller than 1 acre and commercial and industrial uses. Urban service facilities and infrastructure are required in these areas and should be coordinated with land uses. Outlying Communities allow for small communities, such as Wikieup, to continue growing in their current patterns. Outlying Communities provide for residential uses at urban, suburban, or rural densities, as well as neighborhood commercial, public, recreational, or agricultural uses.

In addition to the Land Use Element, the General Plan includes a Public Infrastructure and Services Element and a Housing Element. These elements do not specify policies for utilities, such as a pipelines, other than that these facilities should be coordinated with planned land uses.

The Mohave County Zoning Ordinance (2000) regulates the specific uses permitted on individual properties. The primary zones within the Project area are "A-R" and "M-X." Zone "A-R" allows one residence per lot, agricultural uses, guest ranches, schools, churches, public buildings, playgrounds, greenhouses, and wireless communication towers. Zone "M-X" allows heavy manufacturing and industrial uses such as canneries, fertilizer plants, refineries, commercial feed lots, meat packing plants, and public and private utility power stations and commercial generating plants. Special use permits are required for uses not explicitly allowed in a zone.

3.7.2 Environmental Consequences

3.7.2.1 Identification of Issues

The following issues were identified during scoping and preparation of this Draft EIS:

- natural gas pipeline effects on private and public lands
- access road right-of-way and stream crossings and timing for completion
- effects on private parcel lots acquired for future residential development near the proposed power plant site and pipeline route

3.7.2.2 Significance Criteria

The effects of the Proposed Action and alternatives would be considered significant if the following were to occur:

- any substantive inconsistencies with existing laws, ordinances, or regulations (BLM, state, or county)
- uncompensated permanent displacement of an existing residence or business by the proposed Project

3.7.2.3 Impact Assessment Methods

The assessment of impacts required an inventory of existing uses in areas where the Proposed Action and alternative pipeline corridors would be located, and where OPGW installation would occur. Data on planned future land uses were acquired from adopted plans from the BLM and Mohave County supplemented by personal communication with agency personnel. Additionally, the land use goals, objectives, policies, and management prescriptions stated in these plans were reviewed for potential conflicts with the proposed Project.

The anticipated physical impacts on land uses are based on the locations where Proposed Actions would occur. The sensitivity of nearby land uses within the region of influence also was considered if the proposed Project would be anticipated to interfere with the function of that land use. Duration of impact also was considered. Long-term impacts are considered those that would be permanent or those that would last beyond the construction period and short-term impacts are considered those associated with construction.

3.7.2.4 Actions Incorporated into the Proposed Action to Reduce or Prevent Impacts

Measures to reduce or eliminate land use and access impacts would be implemented as part of the Proposed Action, as follows:

- The proposed power plant site, substation, well heads, and evaporation ponds would be fenced to prevent conflicts with livestock and/or wild burros.
- The proposed access road serving the proposed power plant site would provide access to the nearby residence and existing clay mining operation south of the plant.
- The pipeline would be located parallel to existing rights-of-way to the extent feasible and practical.
- Easements and rights-of-way from appropriate owners/agencies would be acquired prior to Project construction.
- To the extent feasible, the pipeline would be located within the construction corridor so that permanent displacement of a residence or business would not occur.
- Following pipeline installation, the terrain of the construction corridor would be recontoured and revegetated based on input from respective landowners and land-management agencies and the final reclamation plans.
- Alternative vehicle routes would be provided when pipeline installation activities disturb existing access roads. Disturbance of access roads would be limited to three to five workdays, when possible.
- Access roads disturbed during pipeline installation would be restored to near original conditions.

3.7.2.5 Impact Assessment

Proposed Action

Proposed Power Plant Site and Evaporation Ponds

The proposed power plant, substation, one water production well, and the cooling water

evaporation ponds would be located on a 120-acre, privately owned parcel within the unincorporated area of Mohave County in Section 5, T15N, R12W. The 120-acre site is primarily vacant of developed uses; the notable exceptions are the Mead-Phoenix Project 500-kV and Mead-Liberty 345-kV transmission lines, which cross through the western half of the site. Although cattle and/or wild burros graze the proposed power plant site, a fence would be constructed around the plant site and associated facilities to prohibit entry by livestock and wild burros.

The entire 120-acre parcel, located in unincorporated Mohave County, has been designated as a UDA through an amendment to the Mohave County General Plan (Board of Supervisors Resolution 2149, April 17, 2000). UDAs allow for industrial development (Mohave County 1995). The parcel also has been rezoned to "M-X" for heavy manufacturing (Board of Supervisors Resolution 2150, April 17, 2000). Zoning district "M-X" allows for utility power stations and commercial generating plants (Mohave County 2000). The surrounding privately owned lands, also within unincorporated Mohave County, are within the RDA and zoned "A-R" for agricultural and/or residential uses. Nearby BLM-managed lands are grazed under an existing allotment, used for utilities, provide recreation uses, and allow for access to public and private lands. Permitted uses on private and public lands would not change as a result of the proposed Project.

Development of the power plant, substation, and evaporation ponds would occur over approximately 20 months and would include disturbance of approximately 56 acres of privately owned land. The proposed power plant site is already designated and zoned for the proposed use and would not require additional authorization from Mohave County. Development at the proposed power plant site is consistent with county land use plans. No displacement of residences or businesses would be anticipated. Therefore, no significant adverse land use impacts would be anticipated at the proposed power plant site and evaporation ponds under the Proposed Action.

Access Road

The proposed access road to the power plant site would replace the existing access road to the site, which is a road that travels from southwest to northeast through Section 7. The road through the western half of Section 7 would become inaccessible, but the proposed access road would provide access to the existing residence in Section 7 and the mining operations to the south. The partial disturbance within the area of the proposed road alignment suggests that vehicles (potentially including off-highway vehicles [OHVs]) currently use the alignment for access; adjacent areas are used for grazing or are vacant. In Section 7, the road would cross the Phelps Dodge water pipeline alignment. No disturbance of the underground water pipeline would be anticipated. An additional road segment would be developed off the access road to the south through the center of Section 7 for a length of about ¾ mile to serve the proposed wells.

The proposed access road would be located primarily on privately owned lands in Sections 1 and 7. The road would cross through one section of BLM-managed land, Section 12. Additionally, the road would cross the two section corners of BLM-managed land at its end near the plant site (Sections 6 and 8, T15N, R12W). The proposed road would not conflict with BLM management guidelines. Mohave County would acquire ownership, easements, and/or right-of-way for the county portion of the road. Privately owned lands can be acquired through purchase or easements; BLM would require that the county apply for right-of-way on Sections 12 (if outside the existing right-of-way), 6, and 8. Development of the proposed road would occur on approximately 21 acres; 19 acres are private and 2 acres are managed by BLM. Thus, impacts of the access road on land use would not be significant.

Development of the access road would not conflict with goals and policies of the Mohave

County General Plan, Transportation Element. The alignment of the access road would efficiently serve the plant site without adversely affecting surrounding land uses, consistent with Mohave County General Plan transportation goals and policies (Goals 51, 52; Policies 51.1, 52.1, 52.3). Thus, impacts of the proposed access road on land use would not be significant.

Pumping Wells, Agricultural Area, and Water Pipelines

Four water production wells, two observation wells, and more than 100 acres of agricultural activities are proposed for the eastern half of Section 7, T15N, R12W. The wells and pipeline routes would require disturbance of approximately 26 acres. Agricultural activities would occupy approximately 107 acres and would include crops such as Bermuda grass, alfalfa, small grains, vegetables, pecans, or olives. Water use for the agricultural activities would reach a maximum of 400 gallons per minute (650 acre-feet per year). This water would be part of the proposed water budget for all power plant uses (refer to Section 3.4). Development of the wells and agricultural activities would displace an existing dirt road, which currently provides access to the residence southwest of the plant site from US 93.

This half-section of privately owned land is located within the unincorporated area of Mohave County. The land lies within the RDA (Mohave County 1995) and is zoned "A-R." This zoning district allows for primarily agricultural uses and single-family residences. The well and agricultural area already are designated and zoned for the proposed use and would not require additional authorization from Mohave County. Therefore, development at the wells and agricultural uses are consistent with existing plans. The wells and agricultural activities would not displace residences or businesses. No significant adverse land use impacts would be anticipated due to development and operation of the wells and agricultural activities.

Communication Facilities

The primary communication facilities for the substation and power plant site would involve installing microwave dishes on existing microwave towers. Because these areas already have radio and microwave towers located in the vicinity and adequate access, no negative impacts on land uses would be anticipated from the primary communication facilities.

Activities for the construction and maintenance of Western's redundant communication facilities would include the installation of microwave dishes at Phoenix, Towers Mountain, and Perkins (Option 1), and/or at the Big Sandy Substation and an existing Salt River Project (SRP) microwave facility (Option 2). The land uses in these areas would not change, as these locations already have existing facilities similar to those proposed.

Option 1 would also require replacing the existing overhead ground wire on the Mead-Liberty 345-kV transmission line towers with an OPGW between the Big Sandy Substation and the Peacock Substation. As described for the alternative pipeline, land uses along the corridor are limited to ranching/grazing and some scattered residences. North of the Alternative T gas pipeline corridor along the Mead-Liberty 345-kV transmission line, land uses are primarily large acreage ranches.

It is anticipated that all pulling and tensioning sites would be within the existing transmission line rights-of-way; no residential areas would be disturbed. Maintenance activities would be similar to those of the existing transmission line. Because of the temporary and limited disturbance associated with these activities, and that the installation would occur within the existing right-of-way, no adverse impacts on land uses are anticipated.

Proposed Gas Pipeline Corridor

The proposed natural gas pipeline route would follow the proposed access road west to US 93

(within a 200-foot-wide right-of-way), then turn north and follow along the east side of US 93. The pipeline would follow along US 93 for approximately 7 miles (in corridor segment R5) to the intersection of US 93 with the Mead-Phoenix Project 500-kV and Mead-Liberty 345-kV transmission lines. Despite the previous disturbance along the access road and US 93, installation of the pipeline in this corridor segment would alter terrain and vegetation that has remained intact along the eastern margins of the right-of-way.

Caithness has proposed to cross the Big Sandy River either by trenching or directional boring. Trenching would require disturbance to the riverbed and associated vegetation, while directional boring would not disturb the riverbed. The pipeline would pass near developed uses that are concentrated along US 93 in Wikieup. There are up to 15 residences and about 6 businesses (2 abandoned) within the corridor that would be potentially affected during pipeline construction due to their proximity to the existing highway right-of-way. Where necessary, the pipeline would be located within the existing right-of-way for US 93. Additionally, to the extent feasible, the pipeline would be located within the corridor such that the permanent relocation of residences or businesses, or impacts on the existing gas station or nursery, would not occur. However, if this could not be done, the resident or business would be compensated either through the process of eminent domain or by mutually agreeable business negotiations. Based on a 90-foot wide area of disturbance for the length of the corridor segment, about 84acres would be disturbed.

Corridor segments T4, C3, and T3 of the proposed pipeline corridor include very few developed uses, and are located entirely within the BLM-designated utility corridor. The few existing residences are located just north of the US 93 and transmission line crossing (corridor segments T4 and T5) and in Section 30, T20N, R14W, just west of the transmission lines (corridor segment T3); no residences are located in corridor segment C3. Corridor segment T4 is expanded to allow for avoidance of the Carrow-Stephens Ranches ACEC and nearby topographic features, which would require increased disturbance for installing the pipeline. The varying width of these corridor segments should provide adequate space to install the pipeline without requiring relocation of any residences or any potential impacts on the Carrow-Stephens ACEC.,Since the pipeline would be sited to avoid residences and the ACEC to the extent feasible, potentially significant impacts would be reduced. Impacts resulting from disturbance within the ACEC are discussed in Section 3.10. Based on a 90-foot wide disturbance area, about 150 acres, 20 acres, and 92 acres would be disturbed in corridor segments T4, C3, and T3, respectively.

Pipeline installation in corridor segment C1 would require temporary disturbance of approximately 30 acres of mostly undeveloped rangeland. About half of this corridor segment is located in the BLM-designated utility corridor associated with the transmission lines. The developed uses nearby are primarily roads that provide access to the area. The corridor segment would require crossing these roads (i.e., Old US 93, US 93) temporarily restricting access to some areas. No residential developments are located in this corridor segment.

Pipeline corridor segment R1 follows the north part of Hackberry Road. The corridor segment crosses two natural gas pipelines prior to passing under I-40 at an existing undercrossing. Just north of I-40, the corridor segment intersects a third natural gas pipeline (and terminates). Gas measurement interconnect facilities would be constructed within a new approximately 100- by 100-foot area at each of up to three pipeline interconnections (the southern terminus facilities would be within the proposed power plant site). The residence located near this corridor is on Hackberry Road and outside the road right-of-way. The southernmost pipeline is located just north of the residence and interconnection with that pipeline could require relocation of that residence. However, residents and businesses

would be compensated either through the process of eminent domain or by mutually agreeable business negotiations, (refer to Section 2.2.5), thus impacts would not be significant. Access along Hackberry Road would be temporarily restricted during pipeline construction. Disturbance from pipeline installation would occur over about 35 acres (not including any additional work areas).

Installation of the pipeline is expected to occur over six months and temporarily disturb a 90-foot-wide area within the proposed pipeline corridor, except for a narrower 50-foot disturbance area along the plant access road and the crossing of the Big Sandy River. To the extent possible, terrain within the proposed corridor and in any additional work areas would be returned to natural contours following pipeline installation. Any removal of vegetation on BLM-managed land would be subject to the Reclamation Operation Maintenance Plan for BLM-Managed Public Lands (Appendix B) and would be consistent with Arizona Department of Agriculture native plant salvage regulations (refer to Section 3.11). A 10-foot wide two-track would be maintained along the pipeline route for inspection and maintenance purposes.

The pipeline would come within close proximity to developed uses in Wikieup and along US 93. However, the corridor allows for placement of the pipeline to avoid conflicts with these developed uses. Mohave County has not adopted any policies regarding the placement of natural gas pipelines near developed uses (Delmar 2001); therefore, the proposed pipeline would not conflict with local regulations for the placement of pipeline facilities. Additionally, the SDA located in T20N, R13W is not anticipated to be affected because the pipeline would be in place prior to the residential development of the area. Restrictions would, however, limit future development over the actual pipeline alignment.

The proposed pipeline corridor would cross about 19 miles of private lands, 11 miles of BLM-managed lands, and 9 miles of lands managed by the ASLD. The pipeline would be located predominantly within new rights-of-way. Rights-of-way would be acquired from landowners prior to pipeline installation. Rights-of-way on private lands would be acquired either through the process of eminent domain, if applicable, or by mutually agreeable business practices. ADOT, BLM and ASLD each would require that Caithness obtain a right-of-way for the natural gas pipeline. When within the ADOT right-of-way (i.e., potentially in Wikieup), pipeline installation would conform to the requirements of ADOT's *Guide for Accommodating Utilities on Highway Rights-of-Way*. The Mead-Phoenix Project 500-kV/Mead-Liberty 345-kV transmission lines are within a 1-mile-wide designated utility corridor (BLM 1993). Where Caithness proposes to cross the existing Mead-Phoenix and Mead-Liberty transmission line rights-of-way, the pipeline installation would conform with a license agreement issued by Western. Routing the pipeline along the transmission lines would result in the pipeline being primarily within the utility corridor (refer to Figure 3.7-2), which would be consistent with BLM planning criteria to evaluate existing right-of-way routes, and site utilities in locations that cause the least impacts on important resources (BLM 1993). Based on the 90-foot construction area, pipeline installation in the proposed corridor would disturb about 200 acres of private lands, 118 acres of BLM-managed lands, and 103 acres of lands managed by the ASLD.

Access roads to residences and businesses within the pipeline corridor would be crossed by trenching. Trenching activities in front of any specific business or residence would typically be completed within three to five workdays, and alternate vehicular routes would be provided. Roads would be restored to original conditions following pipeline installation. The U.S. Department of Transportation Federal Highway Administration *Manual on Uniform Traffic Control Devices* would be followed for all work within or adjacent to the US 93 or I-40 corridors. Although some delays may occur due to detours and/or the movement of construction equipment, access to businesses and residences would be

maintained and no significant access impacts would be anticipated from pipeline construction under the Proposed Action. However, if this could not be done, the resident or business would be compensated either through the process of eminent domain or by mutually agreeable business negotiations.

Alternative Gas Pipeline Corridors

Impacts associated with each alternative pipeline corridor are described below by segment. Only corridor segments not previously discussed under the Proposed Action are included below.

Alternative R Gas Pipeline Corridor

The Alternative R gas pipeline corridor would cross about 30 miles of private lands, 5 miles of BLM-managed lands, and 3 miles of lands managed by the ASLD. If the pipeline were located such that a residence or business would be permanently displaced, construction of the pipeline would have the potential to create the same minor, insignificant impacts for businesses and residences as the Proposed Action.

Based on the 90-foot construction area, pipeline installation in the Alternative R gas pipeline corridor would disturb about 312 acres of private lands, 58 acres of BLM-managed lands, and 37 acres of lands managed by the ASLD. Corridor segment R4 crosses through Carrow-Stephens Ranches ACEC and includes about 9 residences. Due to the width of the corridor, the pipeline could be located so that no adverse impacts on the ACEC or displacement of residences would be anticipated. Corridor segments R3 and R2 parallel US 93 through relatively undisturbed rangeland. Developed uses include only 4 residences (all within R3), which would not likely be relocated because the pipeline corridor is wide enough to avoid displacement of the residences. The transition between these two corridor segments includes the US 93 and Hackberry Road intersection.

Residents and businesses would be compensated either through the process of eminent domain or by mutually agreeable business negotiations, (refer to Section 2.2.5), thus impacts would not be significant.

Alternative T Gas Pipeline Corridor

The Alternative T gas pipeline corridor would cross about 16 miles of private lands, 13 miles of BLM-managed lands, and 8 miles of lands managed by the ASLD. Regardless of the corridor, the pipeline would be located predominantly within new rights-of-way acquired in the same manner as the Proposed Action. Construction of the pipeline would have the potential to create the same minor, insignificant impacts for businesses and residences as the Proposed Action.

The Alternative T gas pipeline corridor would disturb about 173 acres of private lands, 149 acres of BLM-managed lands, and 91 acres of lands managed by the ASLD.

Corridor segment T5 begins at the proposed plant site and travels northwest parallel to the Mead-Liberty 345-kV and Mead-Phoenix Project 500-kV transmission lines. Although a primitive access road exists along the transmission lines, topography through this area is much more rugged than along US 93, potentially resulting in difficulties with access and pipeline installation. The corridor crosses the Big Sandy River perpendicularly to create as short of a crossing as possible. The corridor also would cross the Phelps Dodge water pipeline, and the pipeline installation would need to be coordinated to avoid impacts on this existing pipeline. The corridor includes six residences and several non-residential structures along the east side of the Big Sandy River, and three residences in Section 3 (T16N, R13W) east of US 93. The width of the corridor could allow for installation of the pipeline without displacement of the residential uses or other structures. Corridor segments T2 and T1 parallel the transmission lines north through mostly undisturbed rangeland. Developed uses within the corridor are limited to the transmission line and associated access road, Old US 93, and I-40

(corridor segment T1). Installation of the pipeline would require crossing Old US 93, via trenching, and boring under I-40. No residences are located within the corridor; therefore no adverse impacts to residential uses would be anticipated. A large natural gas compressor station is present north of I-40 in Section 24, T21N, R13W. The width of corridor segment T1 could provide adequate space for installation of the pipeline without disturbing the existing compressor station.

Installation of the either alternative pipeline would be expected to occur over six months and temporarily disturb a 90-foot-wide area within the proposed pipeline corridor. To the extent possible, terrain within the proposed corridor and in any additional work areas would be returned to natural contours following pipeline installation. Any removal of vegetation on BLM-managed land would be subject to the Reclamation Operation Management Plan for BLM-Managed Lands (Appendix B) and would be consistent with Arizona Department of Agriculture native plant salvage regulations (refer to Section 3.11). A 10-foot wide two-track would be maintained along the pipeline route for inspection and maintenance purposes.

Though the pipeline would come within close proximity to developed uses in Wikieup and along US 93 (Alternative R gas pipeline corridor), and near the Big Sandy River (Alternative T gas pipeline corridor), any potential conflicts with these uses could be avoided by adjusting the pipeline alignment within the proposed corridor. Further, Mohave County has not adopted any policies regarding the placement of natural gas pipelines near developed uses (Delmar 2001). Therefore, if these adjustments are made, the proposed pipeline would not displace businesses or residences, nor would it conflict with local regulations for the placement of pipeline facilities. Additionally, the SDA located in T20N, R13W would not be significantly affected because the pipeline would be in place prior to the residential development of the area.

Restrictions would, however, limit future development over the actual pipeline alignment.

Residents and businesses would be compensated either through the process of eminent domain or by mutually agreeable business negotiations, (refer to Section 2.2.5), thus impacts would not be significant.

Crossover Segment C2

Crossover corridor segment C2 would be limited to the Old US 93 right-of-way. Pipeline installation through this area would require disturbing a maximum of about 25 acres of undeveloped rangeland. Disturbance would likely be less, however, because the existing road has disturbed part of the right-of-way. No residences are located within the road right-of-way; no residences would be displaced.

No-Action Alternative

The Project would not be developed under the No-Action Alternative. Under this alternative, no land disturbance would occur at the proposed power plant site, no agricultural development would take place in Section 7, and the access road and pipeline would not be constructed as part of the Project. The groundwater production and monitoring wells and associated access roads and well pads completed on private land that were used to identify and test the lower aquifer would remain.

3.7.2.6 Mitigation and Residual Impacts

If adopted, the following measures would be implemented to minimize adverse impacts not considered to be significant:

- To the extent possible, pulling stations for the OPGW would be excluded within 0.25 mile of residential development, to avoid temporary negative impacts to residences.

With the implementation of this measures, there would be no residual impacts.